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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Chang-Seob Kim

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EXAMINER

LAIOS, MARIA J

ART UNIT

PAPER NUMBER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/748,197	Applicant(s) KIM ET AL.	
	Examiner MARIA J. LAIOS	Art Unit 1727	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,6,8,12,14 and 20-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. This office action is in response to the amendment filed 7 January 2011. Claims 1-3, 5, 6, 8, 12, 14, 20-22, 24-28 have been amended and are currently pending.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. The claim rejection under 35 USC 112, second paragraph for claims 1-3, 5, 6, 8, 12, 20-22, 24-28 are withdrawn because the claims have been amended.

Claim Rejections - 35 USC § 103

4. Claims 1-3, 8, 14, 20 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Narukawa et al. (US 5,834,133) in view of Vourlis (US 6,054,233).

As to claims 1-3, 8, 14, and 20, Narukawa et al. discloses a lithium jelly roll battery unit (Figure 6-discloses a wound electrode unit) comprising: housing (200); cap assembly (figure 7-14) connected to an upper portion of the can and having a cap plate and an electrode terminal connected to the cap plate through a terminal through hole formed in the cap plate and having a gasket (243) at an outer surface for insulation from the cap plate (Figures 7-14); a negative electrode plate 230) having a current collector with a first electrode tab and a negative active material coated on a least one surface of the negative electrode current collector (Figure 5); a positive electrode plate having a

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positive current collector with an electrode tab, and a positive active material layer coated on at least on surface of the positive electrode current collector (Figure 4); and a separator that is interposed between the negative and positive electrodes. The positive electrode tab (222) is formed by folding a cut portion of an uncoated area of the positive electrode current collector (224) toward an upper edge of the electrode (Figure 8).

Narukawa et al. does not explicitly state that the cut portion begins at the lower side edge of the current collector thus being formed from the side edge to the cut and extends along more than half the width; but Narukawa et al. teaches that the tab can be cut to size (col. 12 lines 42-44). Therefore one of ordinary skill in the art at the time of the invention would be known to lengthen the tab such that it extends from the bottom edge of the current collector to more than halfway the width of the current collector electrode for a battery requiring a specific tab size. Furthermore it would have been obvious to one of ordinary skill in the art the time of the invention to cut form the edge of the electrode and fold the cut portion toward the upper edge in or to form the tab because Narukawa discloses a cut portion in the center of the electrode but it would be easier to manufacture the tab if the cut was made at the lower side edge and then folded upward.

Narukawa et al. discloses the cut tab of the positive electrode is located on the outer side of the electrode assembly (Figures 6 and 8) but does not disclose that the tab formed by folding is located substantially in the center of the battery electrode unit, at the innermost layer of the electrode unit. However this would be within the skill of an ordinary artisan start the winding electrode unit with the folded portion since this would

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apply pressure to the folded area and since there is a finite number of predictable solutions. [A] person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely that product [was] not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103.” KSR International Co. v. Teleflex Inc., 550 U.S. ___, ___, 82 USPQ2d 1385, 1397 (2007).<

Narukawa et al. discloses one tab at the center of the electrode unit and the other at the outer most layer (Figure 6) but does not show that the tab partially overlap each other. Narukawa does not explicitly disclose the first electrode tab partially overlapping and facing the second electrode tab. However, Narukawa does disclose the tab to be formed in any portion of the plate (col. 10 lines 60-61). Vourlis discloses a wound electrode assembly with a tab located substantially in the center of the electrode unit and the second electrode tab partially overlapping and facing the other electrode tab (Figure 9). Therefore it would have been obvious to place the electrode tabs of the battery unit of Narukawa in a location where, upon wind up of the jelly roll unit, the tabs partially overlap each other because it has been held that rearranging parts of an invention involves only routine skill in the art (In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950)). See MPEP 2144.04 (VI). Furthermore it is noted that a tri-functional electrode as defined by the applicant is the current collector, the tab, and the active material on the current collector.

Claims 24-26, by including all of the structural elements of claims 1 and 2, the apparatus is capable of performing the functions recited in claims 24-26. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429,1431-32 (Fed. Cir. 1997) “[A]pparatus claims cover what a device is, not what a device does.” Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) (*MPEP 2114*).

5. Claims 5, 6, 12, 21, 22, 27 and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Narukawa et al. (US 5,834,133) and Vourlis (US 6,054,233) as applied to claims 1-3, 8, 14, 20 and 24-26 above, and further in view of Narukawa et al. (U.S. Patent Number 5,508,122 hereinafter ‘122).

The disclosures of Narukawa et al. and Vourlis have been discussed above and are incorporated herein.

Narukawa et al. do not teach the use of an insulating tape adhered to either surface of the first or second electrode tab.

Narukawa et al.'122 teach that the lead connecting regions, or electrode tabs, are covered with insulating tape (column 1, lines 14-16, as applied to claims 5, 12, and 21). Narukawa et al. '122 teach that each electrode tab positioned at the outmost has insulating tape on the side toward the center of the spiral electrode, or between the inner and outer surfaces of the first and second electrode tab (column 1, lines 56-59, as applied to claims 6, 22, 27, and 28).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the insulating tape of Narukawa et al. '122 in the battery of Narukawa et al. The insulative tape is used to prevent an internal short circuit (column 1, lines 15-16). Having the insulating tape positioned between the inner and outer surface of the first and second electrode tab, would assure that each lead will not touch another electrode (column 1, lines 59-60).

Furthermore, by including all of the structural elements of claim, the apparatus is capable of performing the functions recited in claims 27 and 28. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429,1431-32 (Fed. Cir. 1997) "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural

limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) (*MPEP 2114*).

Response to Arguments

6. Applicant's arguments filed 7 January 2011 have been fully considered but they are not persuasive.

7. Applicant argues that Narukawa does not disclose a cut that beings at the low edge and extends more than half of the width of the first electrode. Applicant states that if the tab is too long, a portion thereof projection from the upper face of the sealing plate is trimmed.

Narukawa et al. teaches that the tab can be cut to size (col. 12 lines 42-44). A person having ordinary skill in the art would have recognized that the maximization of this teach would have been to extend the incision to the bottom edge of the current collector. Starting the incision more than half-way across the electrode, the tab when folded would project above the electrode. This knowledge would be that of one of ordinary skill in the art and one would be able to cut the tab to size as is taught by Narukawa. Furthermore, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely that product [was] not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was

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obvious under § 103.” *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1397 (2007).<

8. Applicant further argues that Narukawa does not appear to shift the cut/fold to the edge of the collector.

a. In response to this argument the claim language was changed from "between the side edge and the cut..." to "*from* the side edge to the cut..." which changes the scope of the claim.

9. Applicant further argues that there is no apparent reason why a person of ordinary skill in the art at the time of the invention was made to combine the references.

a. In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, it would have been obvious to place the electrode tabs of the battery unit of Narukawa in a location

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where, upon wind up of the jelly roll unit, the tabs partially overlap each other because it has been held that rearranging parts of an invention involves only routine skill in the art (In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950)). See MPEP 2144.04 (VI). .

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARIA J. LAIOS whose telephone number is (571)272-9808. The examiner can normally be reached on 11am-7pm Monday-Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. J. L./
Examiner, Art Unit 1727

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1727